2013
X0 Trail™
Service Manual

Avid

GEN.0000000004233 Rev B

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SRAM LLC WARRANTY

EXTENT OF LIMITED WARRANTY
Except as otherwise set forth herein, SRAM warrants its products to be free from defects in materials or workmanship for a period of two years after original purchase. This warranty only applies to the original owner and is not transferable. Claims under this warranty must be made through the retailer where the bicycle or the SRAM component was purchased. Original proof of purchase is required. **Except as described herein, SRAM makes no other warranties, guaranties, or representations of any type (express or implied), and all warranties (including any implied warranties of reasonable care, merchantibility, or fitness for a particular purpose) are hereby disclaimed.**

LOCAL LAW
This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state (USA), from province to province (Canada), and from country to country elsewhere in the world.

To the extent that this warranty statement is inconsistent with the local law, this warranty shall be deemed modified to be consistent with such law, under such local law, certain disclaimers and limitations of this warranty statement may apply to the customer. For example, some states in the United States of America, as well as some governments outside of the United States (including provinces in Canada) may:

a. Preclude the disclaimers and limitations of this warranty statement from limiting the statutory rights of the consumer (e.g. United Kingdom).

b. Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations.

For Australian customers:
This SRAM limited warranty is provided in Australia by SRAM LLC, 133 North Kingsbury, 4th floor, Chicago, Illinois, 60642, USA. To make a warranty claim please contact the retailer from whom you purchased this SRAM product. Alternatively, you may make a claim by contacting SRAM Australia, 6 Marco Court, Rowville 3178, Australia. For valid claims SRAM will, at its option, either repair or replace your SRAM product. Any expenses incurred in making the warranty claim are your responsibility. The benefits given by this warranty are additional to other rights and remedies that you may have under laws relating to our products. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

LIMITATIONS OF LIABILITY
To the extent allowed by local law, except for the obligations specifically set forth in this warranty statement, in no event shall SRAM or its third party suppliers be liable for direct, indirect, special, incidental, or consequential damages.

LIMITATIONS OF WARRANTY
This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM user manual. The SRAM user manuals can be found online at sram.com, rockshox.com, avidbike.com, truvativ.com, or zipp.com.

This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturers specifications of usage or any other circumstances in which the product has been subjected to forces or loads beyond its design.

This warranty does not apply when the product has been modified, including, but not limited to any attempt to open or repair any electronic and electronic related components, including the motor, controller, battery packs, wiring harnesses, switches, and chargers.

This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed.

This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage as a result of normal use, failure to service according to SRAM recommendations and/or riding or installation in conditions or applications other than recommended.

Wear and tear parts are identified as:

- Dust seals
- Bushings
- Air sealing o-rings
- Glide rings
- Rubber moving parts
- Foam rings
- Rear shock mounting hardware and main seals
- Upper tubes (stanchions)
- Stripped threads/bolts (aluminium, titanium, magnesium or steel)
- Brake sleeves
- Brake pads
- Chains
- Sprockets
- Cassettes
- Shifter and brake cables (inner and outer)
- Handlebar grips
- Shifter grips
- Jockey wheels
- Disc brake rotors
- Wheel braking surfaces
- Bottomout pads
- Bearings
- Bearing races
- Pawls
- Transmission gears
- Spokes
- Free hubs
- Aero bar pads
- Corrosion
- Tools
- Motors
- Batteries

Notwithstanding anything else set forth herein, this warranty is limited to one year for all electronic and electronic related components including motors, controllers, battery packs, wiring harnesses, switches, and chargers. The battery pack and charger warranty does not include damage from power surges, use of improper charger, improper maintenance, or such other misuse.

This warranty shall not cover damages caused by the use of parts of different manufacturers.

This warranty shall not cover damages caused by the use of parts that are not compatible, suitable and/or authorised by SRAM for use with SRAM components.

This warranty shall not cover damages resulting from commercial (rental) use.

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SAFETY FIRST!

At SRAM, we care about YOU. Please, always wear your safety glasses and protective gloves when servicing your products.

Protect yourself! Wear your safety gear!

SAFETY INSTRUCTIONS

- Always wear safety glasses and nitrile gloves when working with DOT fluid.
- Place an oil pan on the floor underneath the area where you will be working on the brake.
- Used DOT fluid should be recycled or disposed of in accordance to local and federal regulations.
- Never pour DOT fluid down a sewage or drainage system or into the ground or a body of water.
- DOT fluids will damage painted surfaces. If any fluid comes in contact with a painted surface (i.e. your frame) or printing on the brakes, wipe it off immediately and clean with isopropyl alcohol or water. Removal of paint and/or printing by DOT fluid is not covered under warranty.
- Do not allow any brake fluid to come in contact with the brake pads. If this occurs, the pads are contaminated and must be replaced.
- For best results, use only Avid High-Performance 5.1 DOT Fluid. If Avid fluid is not available, only use DOT 5.1 or 4 fluid. **Do not use mineral oil or DOT 5 fluid**.

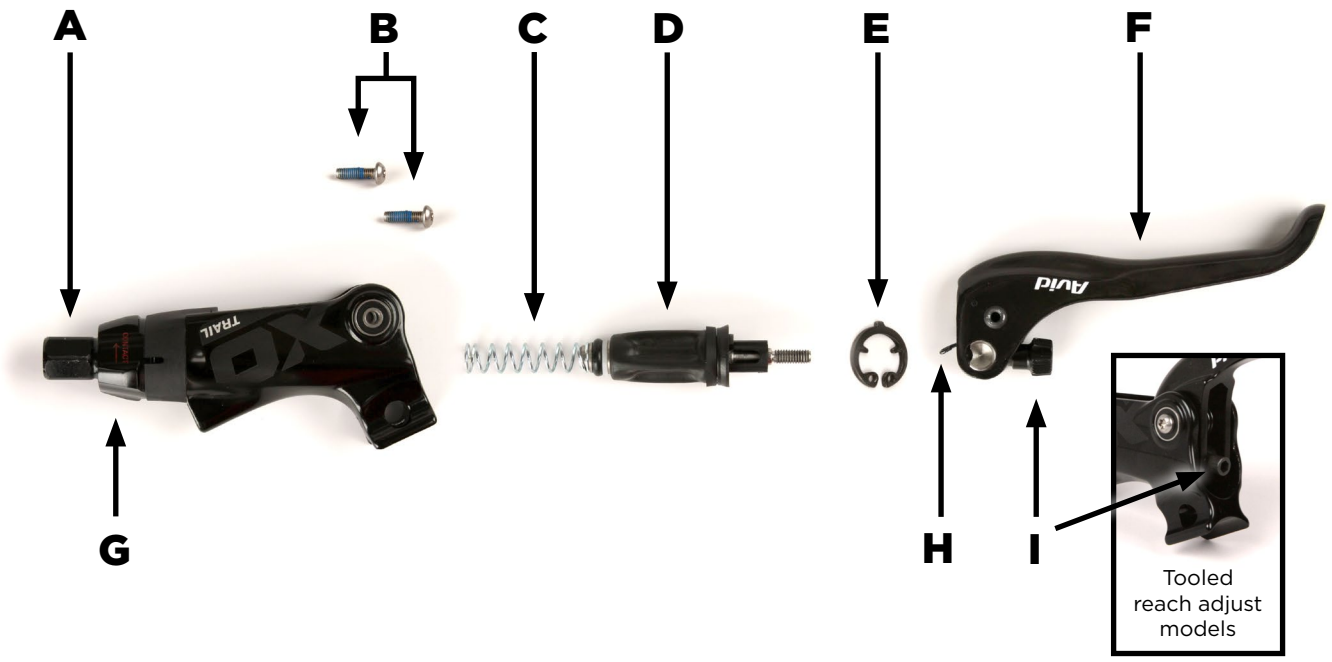
BRAKE SERVICE OVERVIEW

Avid brake systems need to be serviced periodically to optimize braking function. If brake fluid is leaking from any area of the brake, there may be damage or wear and tear to the internal moving parts. If the system has been contaminated with the wrong fluid, there may be damage to all rubber and plastic internal parts. If your brake was damaged in a crash, there may be damage to the lever blade, pushrod, and housing assemblies. Inspect and replace these parts to restore proper brake function.

Your product's appearance may differ from the pictures contained in this publication.

LEVER OVERHAUL

LEVER EXPLODED VIEW



A. Hose stop

B. Pivot bolts

C. Piston spring

D. Piston/bladder/pushrod assembly

E. Snap ring

F. Lever blade

G. Contact adjuster

H. Lever return spring

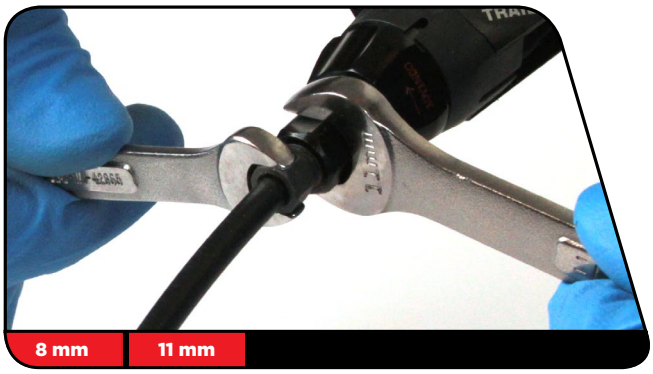
I. Reach adjuster

PARTS AND TOOLS NEEDED FOR SERVICE

- Safety glasses
- Nitrile gloves
- Oil pan
- Isopropyl alcohol
- Clean, lint-free rag
- Avid High-Performance 5.1 DOT Fluid or DOT 4 Fluid, or Avid DOT Grease or DOT 5.1 or 4 compatible grease
- Bench vise
- Long tipped snap ring pliers
- Pick with a 90 degree bent tip
- 3 mm hex wrench (tooled reach adjust models only)
- T10, T25 TORX® wrench
- T10, T25 TORX bit socket
- 11 mm open end wrench
- 8 mm flare nut wrench
- 8 mm flare nut crowfoot
- Torque wrench

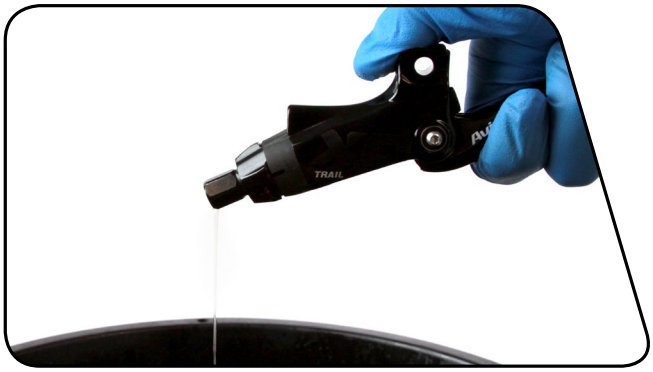
1 Use a T25 TORX® wrench to remove the brake clamp bolt from the Discrete clamp, MMX, or XLoc™ (XLoc requires removal of the shifter). Remove the brake lever from the handlebar. Pull the hose boot off the compression nut and slide it down the hose.

2 Use an 11 mm open end wrench to hold the hose stop in place and use an 8 mm flare nut wrench to remove the hose compression nut. Pull the brake hose and compression fitting from the brake lever body.



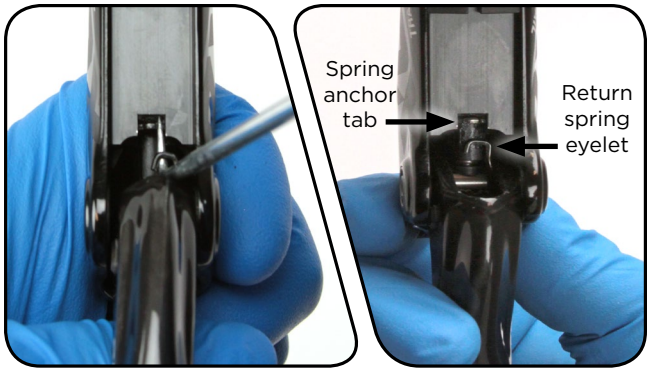
3 Pour the brake fluid into an oil pan. Squeeze the lever to pump excess brake fluid from inside the lever assembly.

If the system has been contaminated with the wrong fluid, flush all the parts with soapy water, rinse, and allow to dry prior to rebuilding. Install all new seals and a new hose.



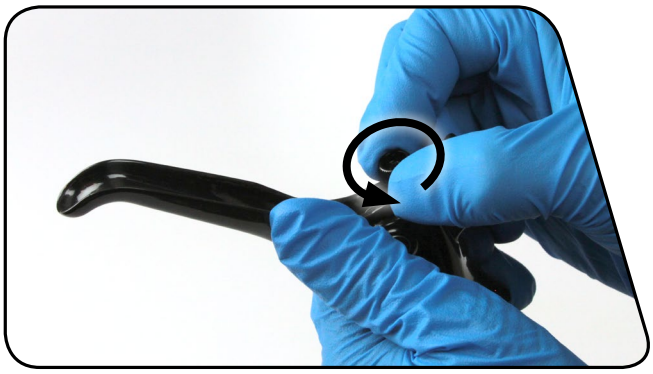
4 Use a T10 TORX to remove the pivot bolts from both sides of the lever.

5 Use a pick to disengage the return spring eyelet from the spring anchor tab.



6 Turn the reach adjuster counter-clockwise until the adjuster disengages from the pushrod.

Tooled reach adjust models: Use a 3 mm hex wrench to turn the reach adjuster.



7 Remove the lever from the lever body.

8 Clamp a 2 mm hex wrench into a bench vise, with the tool positioned vertically. Insert the lever body on the wrench through the fluid flow port in the master cylinder head.

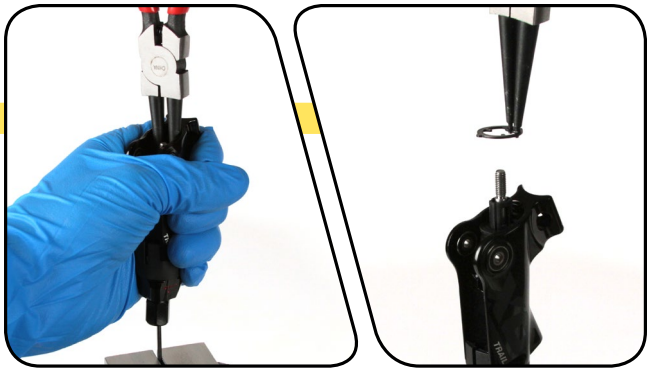
Place a clean rag under the lever body to wipe up any fluid that may spill out.

9 Use the pliers to apply downward pressure to the lever body and remove the snap ring.

Remove the piston/bladder assembly.

⚠ CAUTION - EYE HAZARD

Do not look directly into the lever body while performing this step. The internal piston/spring assembly is preloaded and will come out of the lever body quickly, which can result in injury. Wear safety glasses.



10 Lubricate a new piston/bladder/snap ring assembly by dipping it into Avid High-Performance 5.1 DOT Fluid.

You can also use Avid DOT Grease, or DOT 5.1 or 4 compatible grease, as a lubricant.

11 Insert the piston/bladder assembly into the lever body with the keyed section of the piston retainer oriented toward the opening in the lever body.

Use the snap ring pliers to push the piston/bladder assembly into the lever body, and secure the snap ring in its groove. Orient the snap ring eyelets opposite the opening in the lever body.

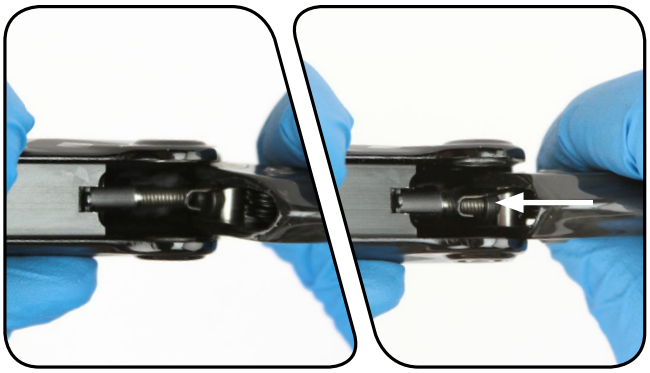
You can also use a 10 mm deep socket against the snap ring to push the piston/bladder/snap ring assembly into the lever body.

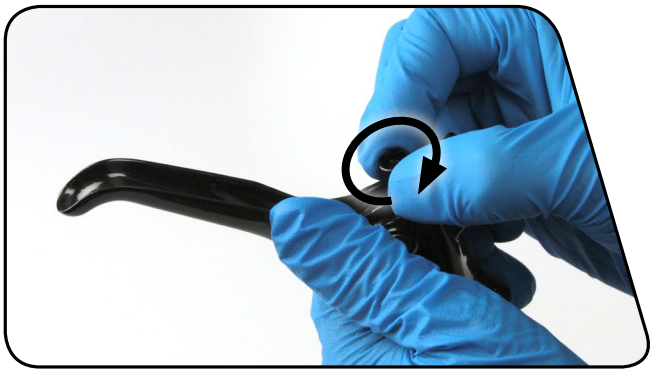
If you push the snap ring past its groove, you can use the 2 mm hex in the vise to push on the assembly from inside the fluid flow port, which will seat the snap ring into the groove.

12 Insert the lever blade into the lever body.

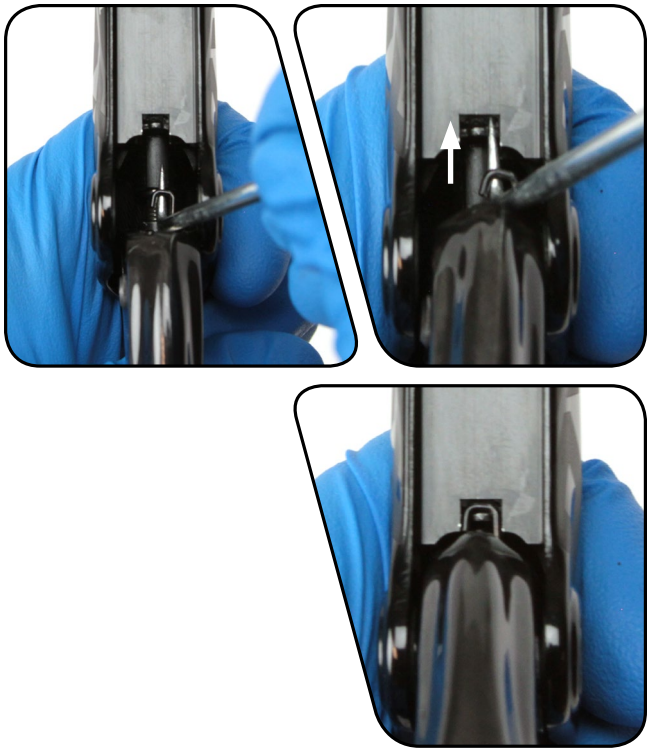
Thread the reach adjuster onto the pushrod and turn it clockwise an additional 5-6 complete turns.

Tooled reach adjust models: Use a 3 mm hex wrench to turn the reach adjuster.





13 Use the angled tip of a pick to lift and fasten the eyelet of the lever return spring onto the spring anchor tab on the snap ring.

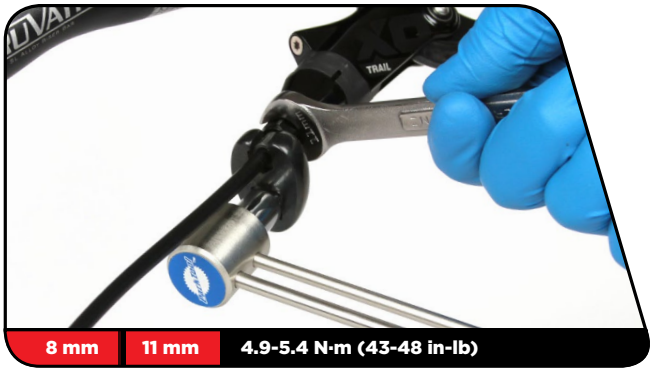


14 Use a T10 TORX® wrench to install the pivot bolts into both sides of the lever. Use a torque wrench with a T10 TORX bit socket to tighten the pivot bolts to 1.1-1.2 N·m (10-11 in-lb).

15 Thread the compression nut into the lever body until it stops. Hold the hose stop secure with an 11 mm open end wrench and use a torque wrench with an 8 mm flare nut crowfoot to tighten the compression nut to 4.9-5.4 N·m (43-48 in-lb).

Spray isopropyl alcohol on the lever and clean it with a rag.

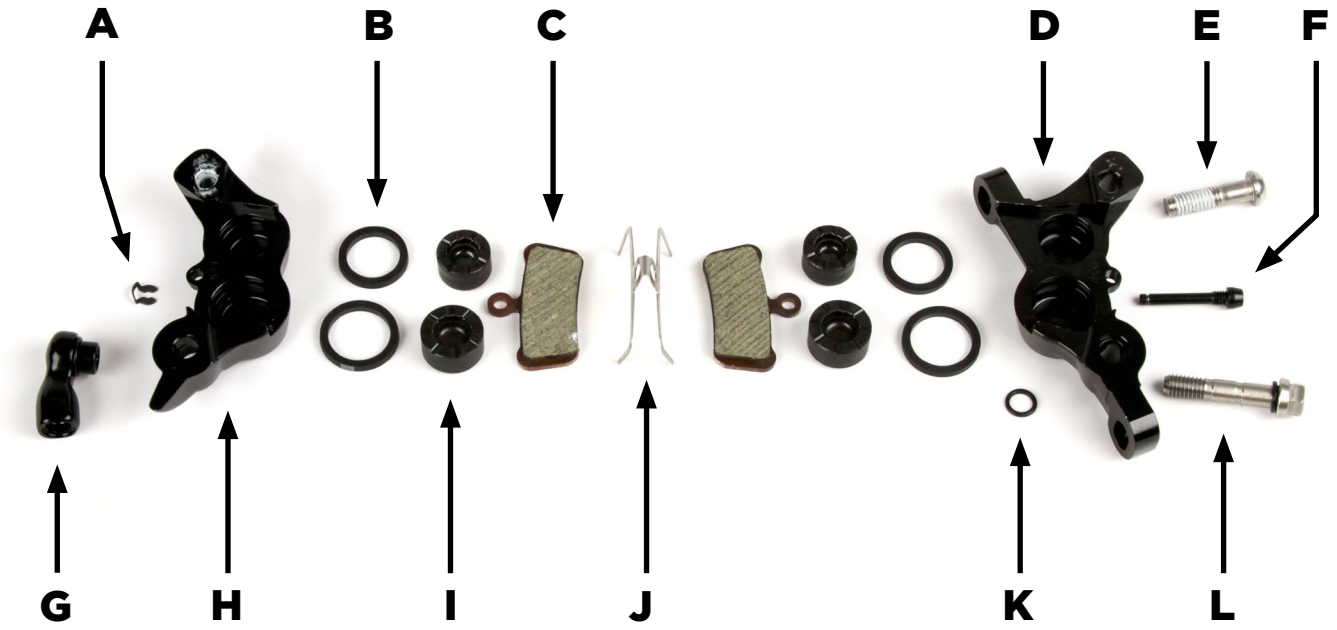
Slide the hose boot onto the compression nut.



16 Reinstall the brake lever to the Discrete clamp, MMX, or XLoc™. Use a torque wrench with a T25 TORX® bit socket to reinstall the brake clamp bolt into the Discrete clamp, MMX, or XLoc and tighten it to 5-6 N·m (44-52 in-lb).

CALIPER OVERHAUL

CALIPER EXPLODED VIEW



A. E-clip

B. Piston seals

C. Brake pad

D. Outboard caliper body half

E. Caliper body bolt

F. Pad retainer bolt

G. Banjo fitting

H. Inboard caliper body half

I. Caliper pistons

J. Pad spreader clip

K. Caliper o-ring

L. Banjo bolt

PARTS AND TOOLS NEEDED FOR SERVICE

- Safety glasses
- Nitrile gloves
- Oil pan
- Isopropyl alcohol
- Clean, lint-free rag
- Avid High-Performance 5.1 DOT Fluid or DOT 4 Fluid, or Avid DOT Grease or DOT 5.1 or 4 compatible grease
- Air compressor with rubber-tipped blow gun chuck
- Soft rubber mat or small section of butyl inner tube
- Needle nose pliers
- Pick with a 90 degree bent tip
- 2.5, 5 mm hex wrench
- 2.5 mm hex bit socket
- T25 TORX®
- T25 TORX bit socket
- 8 mm open end wrench
- 8 mm flare nut crowfoot
- Torque wrench

TROUBLESHOOTING

'Sticky' or slow brake pad return feel/excessive lever throw

Before completely disassembling your caliper, it's worth trying to loosen the sticky pistons. Try the following:

1. Clamp the bicycle in a bicycle work stand.
2. Remove the affected wheel.
3. Squeeze the brake lever several times until the pads nearly contact one another.
4. Push the XO Trail pad spreader clip in between the pads to spread the pads to the full width of the clip.
5. Remove the clip.
6. Repeat steps 3-5 several times.
7. Reinstall the wheel.
8. Squeeze the lever several times to position the pads at the proper distance from the rotor.
9. Center the caliper on the rotor if necessary.
10. Spin the wheel and check brake function. All pistons should now be moving freely and there should not be excessive lever throw. If there is no improvement, continue with caliper service.

1 Use a 5 mm hex wrench to remove the brake caliper from the fork or frame and remove the caliper mounting bracket and hardware from the caliper. Set aside in the correct order.

2 Remove the e-clip from the pad retainer bolt. Use a 2.5 mm hex wrench to remove the pad retainer bolt from the caliper.

3 Pull on the brake pad tabs to remove the pads and pad spreader clip.

If the total thickness of the backing plate and pad friction material is less than 3 mm, the brake pads need to be replaced.

4 Use an 8 mm open end wrench to remove the banjo bolt, and a T25 TORX® wrench to remove the caliper body bolt.

Brake fluid will leak, so hold the caliper over a container to catch the fluid.

Set the hose and banjo fitting aside

5 Separate the caliper body halves.

6 **Caliper Piston Removal:**

Place one of the caliper halves, piston side down, on a soft rubber mat or a small section of inner tube on a flat surface.

Insert a rubber-tipped blow gun chuck nozzle into the banjo port.

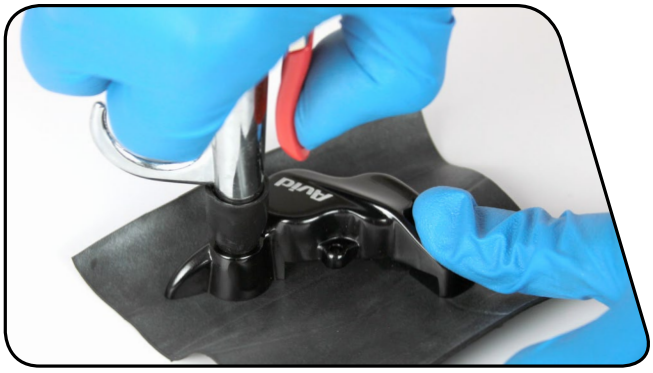
While firmly pushing against the caliper half and chuck nozzle, squeeze the air chuck to force air into the banjo port and unseat the pistons from the caliper.

Place a rag over the caliper to contain any fluid that may spray.

Continue to force air into the caliper until both pistons unseat. Do not remove one piston if the other is still seated.

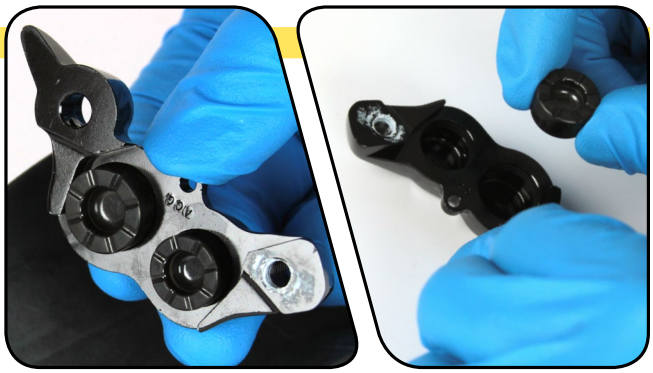
Remove the pistons from the caliper.

Repeat this process for the other caliper half.



⚠ CAUTION - EYE HAZARD

Forced air will dislodge the caliper pistons rapidly, which can lead to bodily injury or damage to the parts. Point the caliper pistons toward a rubber surface before forcing air into the caliper.



7 Use a pick to remove the piston seals from inside each caliper body half. Install new seals inside each caliper body half.

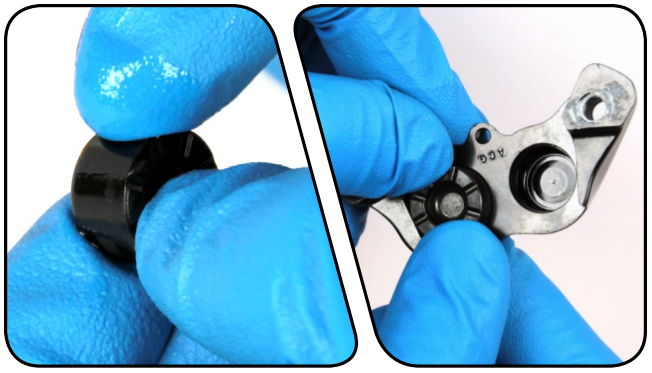
Do not scratch the seal gland with the pick.

You can also use Avid DOT Grease or DOT 5.1 or 4 compatible grease as a lubricant.

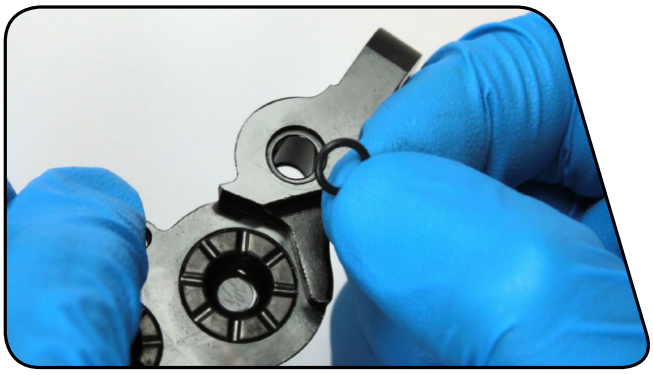
8 Inspect the caliper pistons for damage and replace them if necessary. Apply a small amount of DOT 5.1 fluid to the circumference of each piston. Reinstall the pistons into each half of the caliper body. Wipe any excess fluid from the caliper halves.

There are two larger diameter pistons and two smaller diameter pistons. Install one of each into each caliper half.

You can also use Avid DOT Grease or DOT 5.1 or 4 compatible grease as a lubricant.



9 Remove the banjo port o-ring from the outboard caliper half.



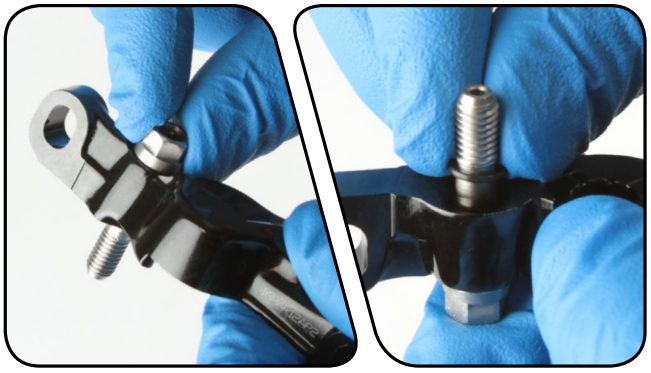
10 Remove the o-rings from the banjo bolt and banjo fitting. Apply a small amount of DOT 5.1 fluid to the new o-rings and install them.

11 Reassemble the caliper halves.

Insert the banjo bolt through the outboard caliper half. Apply a small amount of DOT 5.1 fluid to the caliper o-ring and install it onto the banjo bolt.

Place the inboard caliper half onto the banjo bolt. Place the banjo fitting onto the threads of the banjo bolt. Turn the bolt into the fitting until it stops. Do not tighten the banjo bolt yet.

Install the caliper body bolt and use a torque wrench with a T25 TORX® bit socket to tighten it to 9.7-11.7 N·m (86-104 in-lb).



12 Hold the banjo fitting at the desired angle. Use a torque wrench with an 8 mm flare nut crowfoot to tighten the banjo bolt to 9.7-11.7 N·m (86-104 in-lb).

13 Insert the Bleed Block into the caliper in place of the brake pads.

You will need to bleed your brakes before reinstalling the brake pads.

Click here for detailed brake pad removal instructions

14 Spray isopropyl alcohol on the caliper and clean it with a rag.

Visually check your work. If there are any o-rings that are protruding beyond the outside edges of the banjo or bolt, remove and replace the o-rings, then repeat the installation process.

Overhauling the caliper introduces a small amount of air into the system. It is necessary to bleed the brakes for optimal performance.
Click here for detailed brake bleed instructions

HOSE LENGTH ADJUSTMENT

SAFETY INSTRUCTIONS

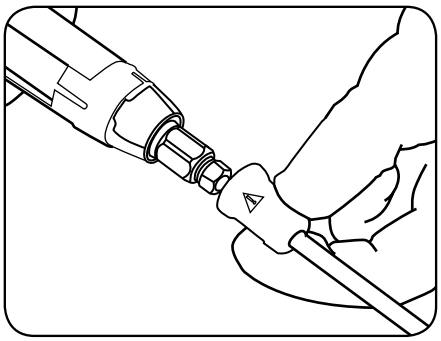
- Always wear safety glasses and nitrile gloves when working with DOT fluid.
- Place an oil pan on the floor underneath the area where you will be working on the brake.
- Used DOT fluid should be recycled or disposed of in accordance to local and federal regulations.
- Never pour DOT fluid down a sewage or drainage system or into the ground or a body of water.
- DOT fluids will damage painted surfaces. If any fluid comes in contact with a painted surface (i.e. your frame) or printing on the brakes, wipe it off immediately and clean with isopropyl alcohol or water. Removal of paint and/or printing by DOT fluid is not covered under warranty.
- Do not allow any brake fluid to come in contact with the brake pads. If this occurs, the pads are contaminated and must be replaced.
- For best results, use only Avid High-Performance 5.1 DOT Fluid. If Avid fluid is not available, only use DOT 5.1 or 4 fluid. **Do not use mineral oil or DOT 5 fluid**.

PARTS AND TOOLS NEEDED FOR SERVICE

- Safety glasses
- Nitrile gloves
- Isopropyl alcohol
- Clean, lint-free rag
- Avid DOT Grease or DOT 5.1 or 4 compatible grease
- Hydraulic hose cutters or very sharp cable housing cutters
- T10 TORX®
- 8 mm flare nut wrench
- 11 mm open end wrench
- Torque wrench

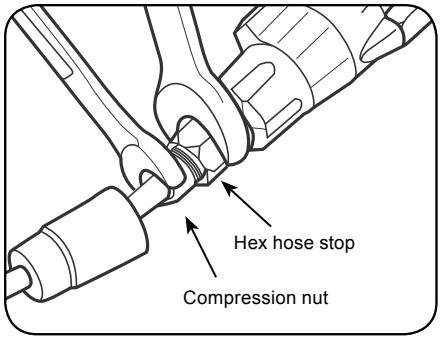
1 Make sure the hoses are properly secured to the bicycle and check the routing of each hose. Account for suspension movement and be sure the handlebars can move freely by turning the bars all the way from side to side.

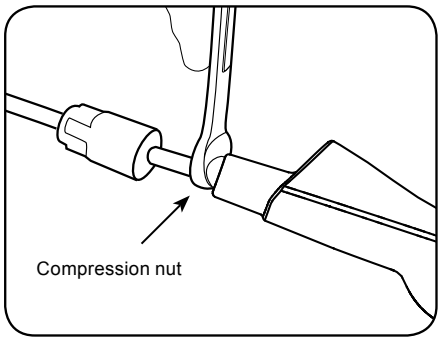
2 Pull the hose boot away from the lever to access the compression nut. If the boot sticks, use a zip tie to pry up a corner of the boot and spray isopropyl alcohol between the boot and the lever. Work the alcohol in; the boot should loosen up and slide easily down the hose.



3 **For models with a compression nut and a hex hose stop:** Use an 11 mm open end wrench to hold the hose stop in place and use an 8 mm flare nut wrench to unthread the compression nut.

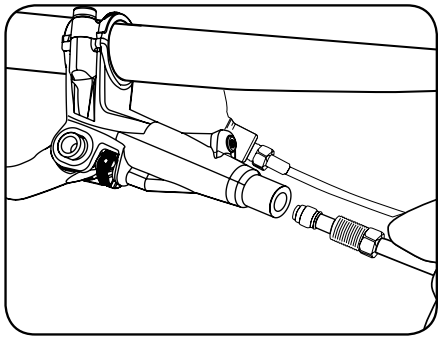
For models with a compression nut only: Use an 8 mm flare nut wrench to unthread the compression nut.





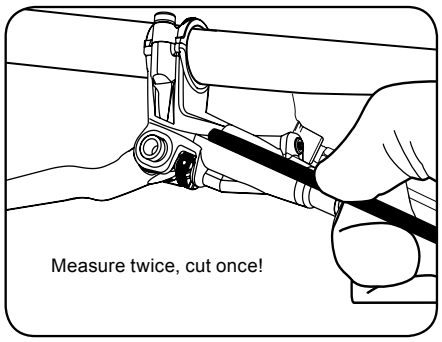
4 Pull the hose from the lever. Be careful, DOT fluid will drip from the hose. Try not to spill too much fluid because any fluid that drips out will create bubbles that you'll have to eliminate later.

Slide the nut down the hose and away from the end where you'll be cutting. Do not pull the brake lever while the hose is removed.



5 Determine where you need to cut the hose by holding it up to the lever in the position you like. Leave a gentle bend in the hose with enough length to freely turn the bars all the way from side to side. Double-check this measurement.

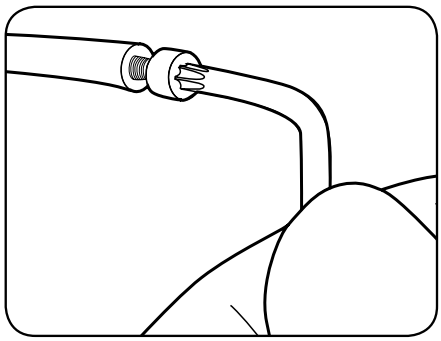
The groove in the lever nose marks the spot where you'll cut the hose. Cut the hose using hydraulic hose cutters or very sharp cable housing cutters.

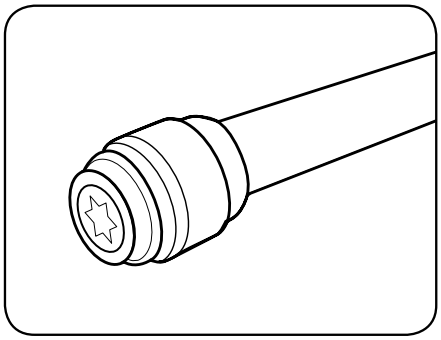


6 Apply Avid DOT Grease to the threads of a new hose barb, the compression fitting outer surfaces and compression nut threads.

While holding the hose firmly, use a T10 TORX® to thread the hose barb into the end of the hose until it is flush.

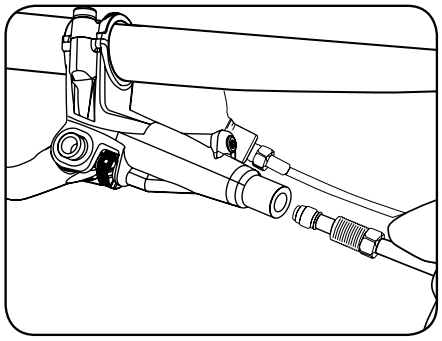
Slide a new compression fitting over the end of the hose with the new hose barb.





7 Push the hose firmly into the lever until it stops.

While holding the hose in place, slide the compression fitting and compression nut up to the lever or hose stop.

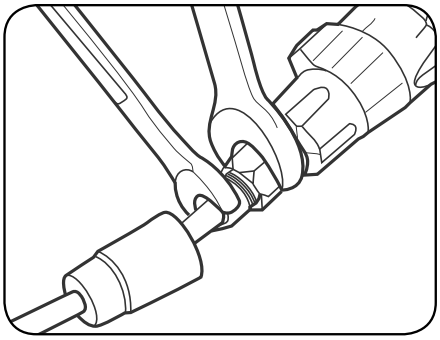


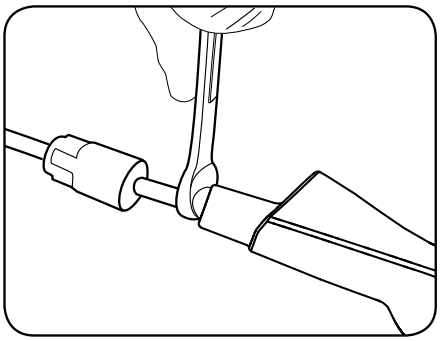
8 **For models with a compression nut and a hex hose stop:** While continuing to push the hose into the hose stop, use an 11 mm open end wrench to hold the hose stop in place and use an 8 mm flare nut wrench to tighten the compression nut to the proper torque.

For models with a compression nut only: While continuing to push the hose into the lever body, use an 8 mm flare nut wrench to tighten the compression nut to the proper torque.

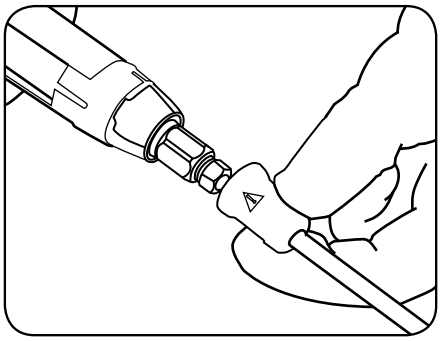
· If your compression fitting is alloy, tighten to 5 N·m (47 in-lb).

· If your compression fitting is steel, tighten to 7.8 N·m (70 in-lb)





9 Slide the boot back into place.



After completing the hose length adjustment, bleed the brakes for optimal performance. Click here for detailed brake bleed instructions

BRAKE BLEED PROCEDURE

Avid brakes are the most powerful and precise hydraulic brakes on the market. A key reason behind this is the ability to optimize brake performance with a perfect bleed. The goal of bleeding is to remove any air that is trapped in the hose, caliper, or lever. Air trapped in a hydraulic brake system degrades the performance of the brake. The following instructions will walk you through our simple bleed procedure.

Avid brakes come with hoses attached and bled. If you don't need to change the hose length, you do not need to bleed the system prior to installation.

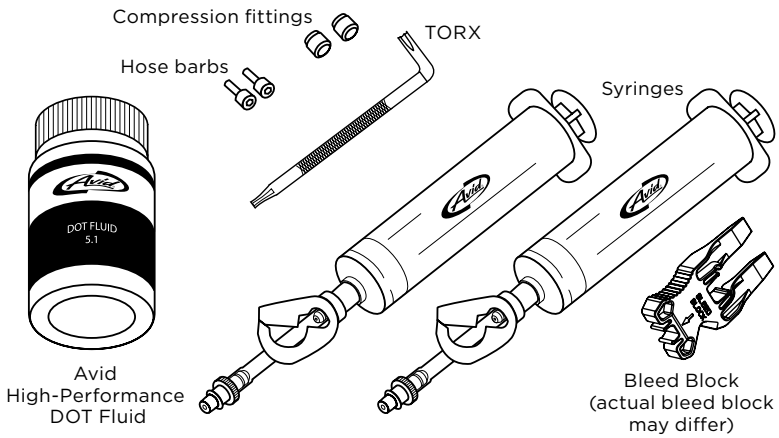
Supplemental video instruction is available at www.sram.com/en/service.

SAFETY INSTRUCTIONS

- Always wear safety glasses and nitrile gloves when working with DOT fluid.
- Place an oil pan on the floor underneath the area where you will be working on the brake.
- Used DOT fluid should be recycled or disposed of in accordance to local and federal regulations.
- Never pour DOT fluid down a sewage or drainage system or into the ground or a body of water.
- DOT fluids will damage painted surfaces. If any fluid comes in contact with a painted surface (i.e. your frame) or printing on the brakes, wipe it off immediately and clean with isopropyl alcohol or water. Removal of paint and/or printing by DOT fluid is not covered under warranty.
- Do not allow any brake fluid to come in contact with the brake pads. If this occurs, the pads are contaminated and must be replaced.
- Do not re-use fluid.
- Do not leave the hose clamps closed, this will damage the clear tubing on the syringes.
- For best results, use only Avid High-Performance 5.1 DOT Fluid. If Avid fluid is not available, only use DOT 5.1 or 4 fluid. **Do not use mineral oil or DOT 5 fluid**.

PARTS AND TOOLS NEEDED FOR SERVICE:

- Safety glasses
- Nitrile gloves
- Isopropyl alcohol
- Clean, lint-free rag
- Avid High-Performance 5.1 DOT Fluid or DOT 4 Fluid
- Avid Bleed Kit or Avid Professional Bleed Kit
- Avid Bleed Block
- T10 TORX®
- 2.5 and 4 mm hex wrenches
- Pick



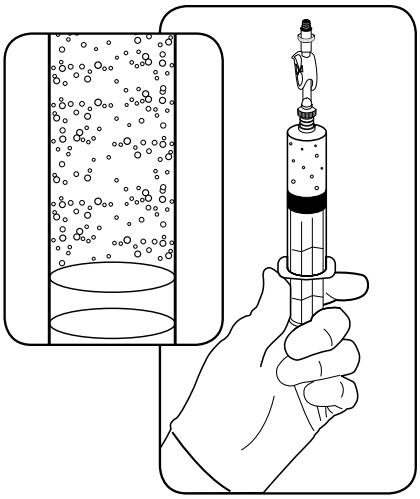
Avid Bleed Kit Contents

Bleeding Avid brakes forces air bubbles out of the system. We recommend that you bleed your brakes at least once a year to ensure optimal performance. If you ride frequently or in aggressive terrain, you should bleed your brakes more often.

When bleeding brakes, you may notice discoloration of the old fluid as it exits the system into the syringe at the lever. If the fluid is severely discolored, this indicates that the fluid is very old. In this case, bleeding the system twice in order to completely remove the old fluid is recommended.

1 Fill one syringe 1/2 full with Avid High-Performance 5.1 DOT Fluid and fill the other syringe 1/4 full.

Hold each syringe with the tip pointed up and tap the side of the syringe with your finger to bring any air bubbles to the top. Place a clean rag around the tip and slowly push the air bubbles out of the syringe. Close the hose clamp on each syringe.



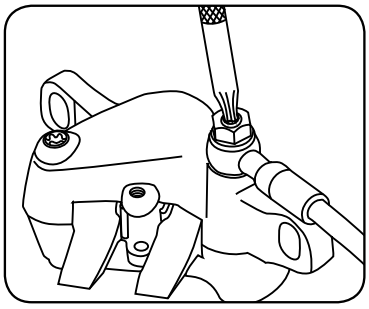
2 De-gas the fluid in the 1/2 full syringe. Leave the hose clamp shut and pull on the plunger. Bubbles will form in the brake fluid. While the plunger is still pulled down, lightly tap the syringe to release the bubbles sticking to the sides and the bottom so that they can rise to the top of the fluid. When the bubbles stop forming and have all risen to the top, release the plunger, open the clamp and carefully push the air out. Repeat several times.

You will not be able to remove all the bubbles.

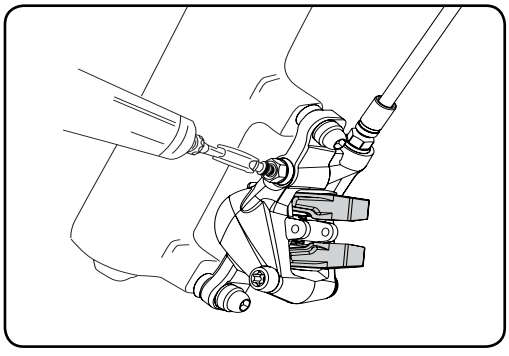
3 Remove the wheel from your bike. Remove the brake pads and spreader clip from the caliper and insert the appropriate Bleed Block. This will help prevent system overfill and keep DOT fluid from contaminating your brake pads.

Click here for detailed brake pad removal instructions

4 Use the T10 TORX® to remove the caliper bleed port screw from the caliper body or banjo bolt

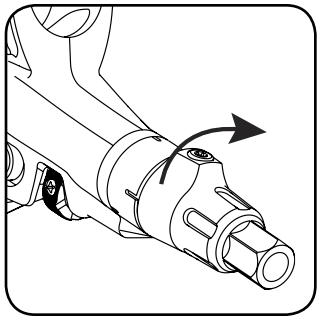


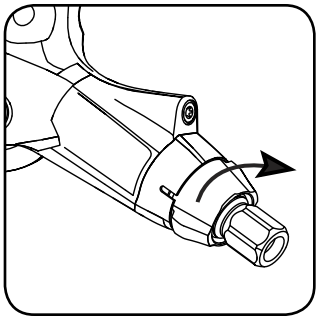
5 Make sure the fluid in the 1/2 full syringe is pushed all the way to the tip so that there is no air gap, then thread into the caliper bleed port.



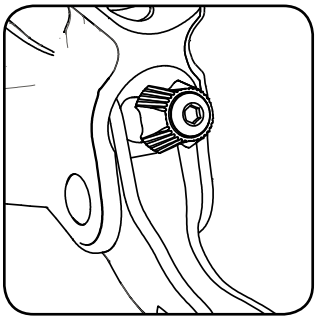
6 **For models with Contact Point Adjustment and a rotating bleed port screw located on the contact point adjuster:** rotate the adjuster in the direction opposite the arrow until it stops, then rotate the adjuster back just enough to place the bleed screw at its highest point.

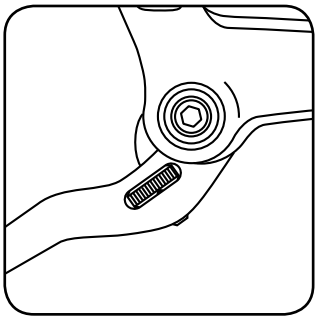
For models with Contact Point Adjustment and a fixed bleed port screw: rotate the adjuster in the direction opposite the arrow on the adjuster knob until it stops.

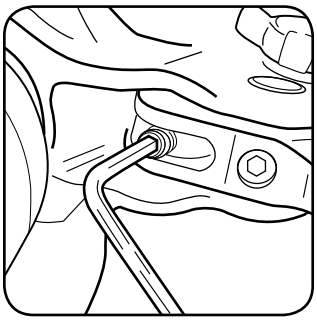


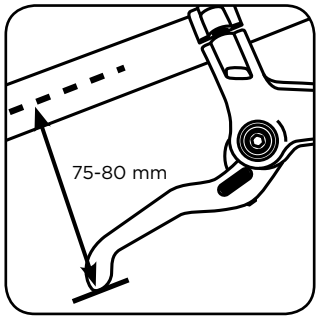


7 **For models equipped with Reach Adjust:** make sure the tip of the lever blade is 75-80 mm from the centerline of the handlebar. If the lever is too far out, it can make bleeding the brake impossible.

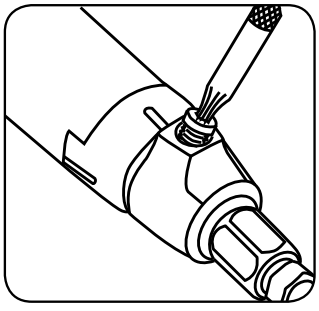








8 Use the T10 TORX® to remove the lever bleed port screw.



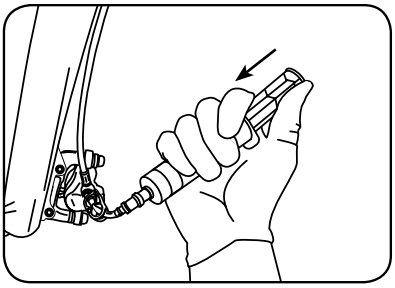
9 Make sure the fluid in the 1/4 full syringe is pushed all the way to the tip so that there is no air gap, then thread into the lever bleed port.

It is not necessary to reposition the angle of the brake lever on the handlebar. You may have a small amount of DOT fluid drip from the bleed port screw, this is normal. Just have a clean rag handy to wipe off any excess after the syringe is installed.

10 Hold both syringes upright.

Gently push on the caliper syringe plunger to move fluid from the caliper syringe into the lever syringe until the lever syringe is increased to 1/2 full and the caliper syringe is decreased to 1/4 full.

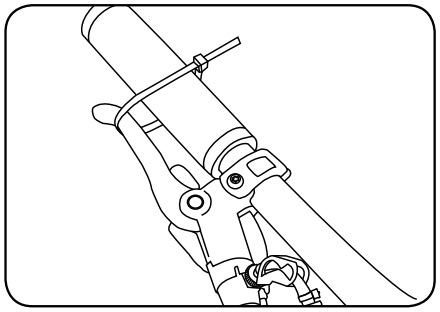
You should see bubbles form in the lever syringe.



11 Close the syringe clamp on the lever.

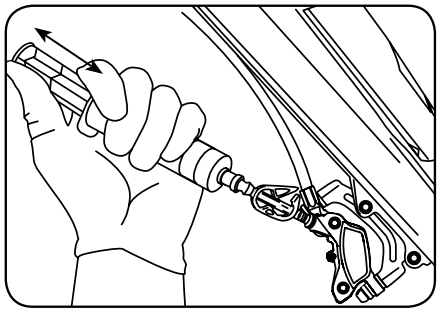
12 Pull the brake lever all the way to the bar with your finger and hold it there until instructed to release the lever in a later step.

If you don't want to hold the lever with your finger, have a friend hold it or you can fasten it with a zip-tie or rubber band.



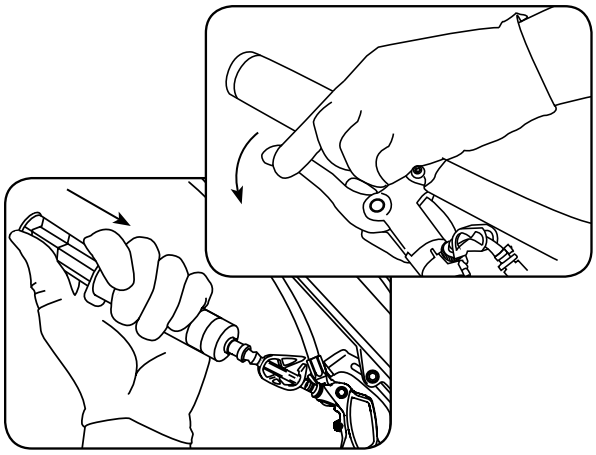
13 Pull out on the caliper syringe plunger to create a vacuum then gently push in on the plunger to pressurize the system. Repeat this procedure several times, until large bubbles stop coming out of the caliper.

Do not pull the plunger past the end of the syringe.



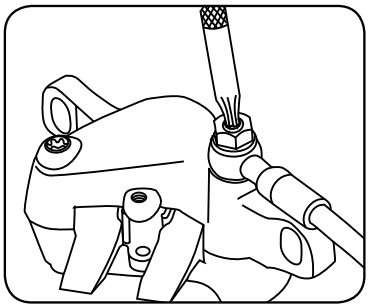
14 Once the large bubbles at the caliper have stopped, apply a small amount of pressure on the syringe plunger and slowly let the pressure extend the brake lever you have been holding with your finger. If you fastened the lever with a zip-tie or rubber bands, remove these first but keep the lever pulled in with your finger, then apply pressure on the syringe plunger.

You will feel the pressure at your finger on the lever, just let the fluid extend the lever back to its original position.



15 Close the clamp on the caliper syringe, then remove the syringe from the caliper and reinstall the bleed port screw.

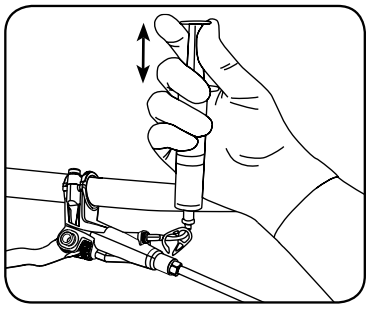
Use a clean rag to wipe off any excess DOT fluid that spills out as you reinstall the bleed port screw.



16 Open the syringe clamp on the lever.

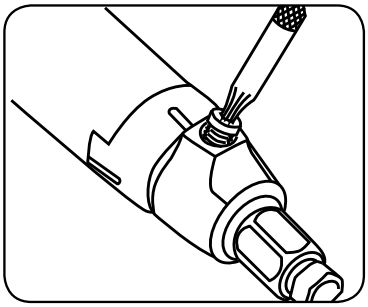
17 Pull out on the lever syringe plunger to create a vacuum, then gently push in on plunger to pressurize the system. Squeeze and release the brake lever ten times, allowing the lever to snap back to its starting position after squeezing (this helps break loose the bubbles).
Repeat this procedure of creating a vacuum at the syringe and squeezing the brake lever ten times until large bubbles stop coming out of the lever.

Do not pull out too hard on the plunger or you will suck air past the plunger seal into the fluid and create more bubbles that you will have to eliminate.



18 Once the large bubbles at the lever have stopped, apply a small amount of pressure on the syringe plunger then remove the syringe and reinstall the bleed port screw.

There will be a small amount of excess DOT fluid that spills out as you remove the syringe and reinstall the bleed port screw, this is normal. be sure to wipe the fluid off the lever with a clean rag.



19 Spray isopropyl alcohol or water onto a clean rag and wipe off the brake lever and caliper to remove any excess DOT fluid.

20 Visually check your work. Inspect the banjo bolt and banjo for any protruding o-rings. If there are any o-rings that are 'squeezed' beyond the outside edges of the banjo or bolt, remove and replace the o-rings, and then repeat the installation process.

21 Remove the Bleed Block from the caliper and reinstall the brake pads and spreader clip.

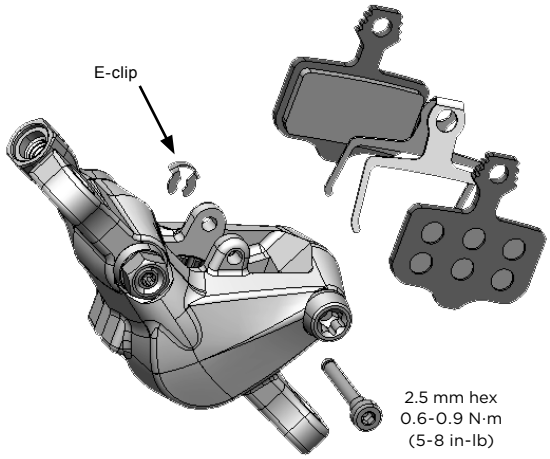
Click here for detailed brake pad installation instructions

22 Reinstall your wheel according to the manufacturer's instructions.

23 Before riding, test your brakes. Pull on the lever, as hard as you would during riding, several times. Make sure to look around the compression nut on the lever, and the banjo bolt on the caliper for any leaks. Make one last check of all the bolts and fittings.

PAD REPLACEMENT INSTRUCTIONS

1 Remove the e-clip from the pad retainer bolt. Use a 2.5 mm hex wrench to remove the pad retainer bolt from the caliper.



2 Place a flat blade screwdriver between the brake pads, then carefully rock it back and forth to push the pistons completely into their bores.

3 Pull on the brake pad tabs to remove the pads and pad spreader clip.

4 Place the spreader clip between the pads as shown. Align the hole in the spreader clip with the holes in the brake pad tabs. Squeeze the pad and clip assembly together, then insert it into the caliper from the top of the caliper. Push the pad/clip assembly into the caliper until the holes in the spreader clip, brake pads, and caliper are aligned.

5 Insert the pad retainer bolt into the outboard side of the caliper, through the pad spreader and pads, and into the inboard side of the caliper. Use a 2.5 mm hex wrench to thread the pad retainer bolt into the caliper, then tighten it to 0.6-0.9 N·m (5-8 in-lb).

Replace the e-clip onto the pad retainer bolt.

DISC BRAKE PAD AND ROTOR BED-IN PROCEDURE

All new brake pads and rotors should be put through a wear-in process called 'bed-in'. The bed-in procedure, which should be performed prior to your first ride, ensures the most consistent and powerful braking feel along with the quietest braking in most riding conditions. The bed-in process heats up the brake pads and rotors which deposits an even layer of brake pad material (transfer layer) to the braking surface of the rotor. It this transfer layer that optimizes braking performance.

⚠ WARNING - CRASH HAZARD

The bed-in process requires you to perform heavy braking. You must be familiar with the power and operation of disc brakes. Braking heavily when not familiar with the power and operation of disc brakes could cause you to crash, which could lead to serious injury and/or death. If you are unfamiliar with the power and operation of disc brakes, you should have the bed-in process performed by a qualified bicycle mechanic.

To safely achieve optimal results, remain seated on the bike during the entire bed-in procedure. Do not lock up the wheels at any point during the bed-in procedure.

1. Accelerate the bike to a moderate speed, then firmly apply the brakes until you are at walking speed. Repeat approximately twenty times.

2. Accelerate the bike to a faster speed. Then very firmly apply the brakes until you are at walking speed. Repeat approximately ten times.

3. Allow the brakes to cool prior to any additional riding.

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